



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.3315

Job Sheet 168231



Part No: 646.3315

Job Qty: 10 ea

Part Name: Blade



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 11/13/17

Job Tracking No:

Due Date: 11/28/17

Created By: Linda Lacelle

Type: Stock

Description:

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	10 Ea	11/27/17	11/27/17	0.00	0.00	Start Up Machining		<i>[Signature]</i>
100	Bandsaw	10 pcs	11/27/17	11/27/17	0.00	0.40	Bandsaw1		<i>[Signature]</i>
110	CNC Vertical Machining	10 pcs	11/27/17	11/27/17	0.51	7.29	HAAS 1		<i>[Signature]</i>
120	QC	10 pcs	11/27/17	11/27/17	0.00	0.00	QC2		<i>[Signature]</i>
130	QC	10 pcs	11/27/17	11/27/17	0.00	0.00	QC8		<i>[Signature]</i>
140	Outsource	10 pcs	11/27/17	11/27/17			MEI001-VC		<i>[Signature]</i>
150	Packaging	10 pcs	11/27/17	11/27/17	0.00	0.00	Packaging2		<i>[Signature]</i>
155	QC	10 pcs	11/27/17	11/27/17	0.00	0.00	QC5		<i>[Signature]</i>
160	SprayPaint	10 pcs	11/28/17	11/28/17	0.00	0.34	Spray Paint		<i>[Signature]</i>
170	QC	10 pcs	11/28/17	11/28/17	0.00	0.00	QC14		<i>[Signature]</i>
180	Packaging	10 pcs	11/28/17	11/28/17	0.00	0.00	Packaging3		<i>[Signature]</i>
190	QC21-SA	10 Ea	11/28/17	11/28/17	0.00	0.00	QC21		<i>[Signature]</i>

Part Op 100 - Cut Blank at 2.600"

Descriptions: 110 - 1-Machine per folio FB147

140 - HEAT TREAT AS PER DWG, SEE NOTE #3

160 - PRIME AS PER DWG, SEE NOTE #4

180 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	MSTEEL-A2-B0.500X1.250	2	53	0	0

Part Specifications

Specifications could not be found.

Plex 11/14/17 6:48 AM dart.boucher.sylvie

DART
AEROSPACE
S031576



Blade

PART NO: 646.3315

Revision:

Operation:

Change No:

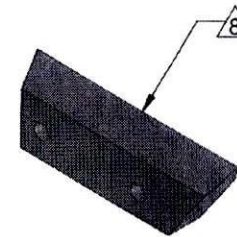
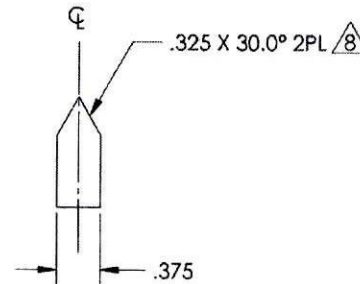
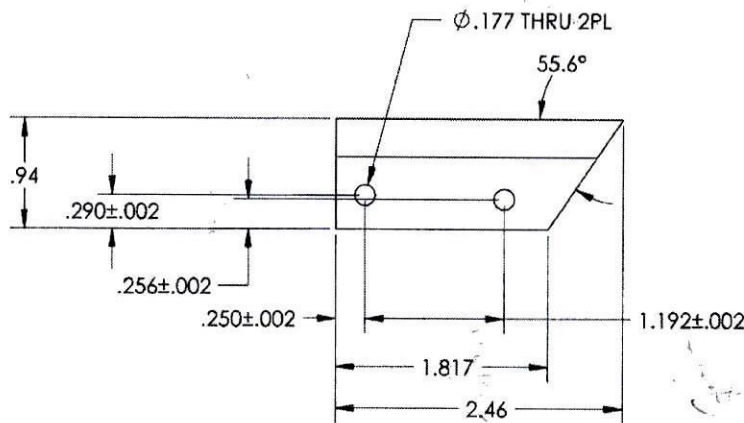
Start up Operation

Mfg Date: 01/12/18

Job No: 168231

Dart Aerospace Ltd.
1278 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5280
Email: sales@dartaero.com
www.dartaerospace.com

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SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 168231

DAS
30
9-89

NOV 16 2017

646.3315

ORIGINAL DATE 08-24-07		08-24-07	
DRAWN BY C. HUFF	CHECKED P. BRAVO	DART AEROSPAC E APICAL INDUSTRIES, INC. 3030 ENTERPRISE CT. SUITE A VISTA, CA 92081 (760) 724-5300	
DRAWING APPROVAL P. BRAVO 08-24-07		UPPER CUTTER ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES 1:1		SIZE B	REV. A
CAGE CODE 07M16		DWG. NO. 646.3300	SCALE NONE
SHEET 7 OF 8			

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐								
OTHER : _____									

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
OTHER : _____									



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO038843**

Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

PO No: PO038843
PO Date: 1/23/18
Due Date: 1/30/18
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Phone:

E-MAILED
JAN 26 2018

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

REVISED \$

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	170134	RBA9937-5	Tail Rotor Nut Wrench "C" Model (Rb Design) HEAT TREATING 1--Issue P/O to Metcor ; P/O _____ RC 45-47 2-Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER Metcore to ship directly to Groupe Altech	Firmed	1/30/18	2 pcs	0 pcs	2 pcs	\$75.00/pcs	\$150.00
Line Item Note Parts made from 4130N Sheet .188 Ship Directly to Groupe Altech										
2	170135	RBA9937-5	Tail Rotor Nut Wrench "C" Model (Rb Design) HEAT TREATING 1--Issue P/O to Metcor ; P/O _____ RC 45-47 2-Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER Metcore to ship directly to Groupe Altech	Firmed	1/30/18	2 pcs	0 pcs	2 pcs	\$75.00/pcs	\$150.00
Line Item Note Parts made from 4130N Sheet .188 Ship Directly to Group Altech										

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3	169324	RBD29823-5A	Tail Rotor Nut Wrench "D" Model (New Design) HEAT TREATING 1--Issue P/O to Metcor ; P/O _____ RC 44-47 2-Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER Metcore to ship directly to Groupe Altech	Firmed	1/30/18	4 pcs	0 pcs	4 pcs	\$75.00/pcs	\$300.00
Line Item Note: Parts made from 4130N sheet .188 Ship directly to Group Altech										
4	170019	RB877528-4-7	6 Tooth Cutter P/O to Metcor P/O _____ Heat treat to RC 50-60, Bead blast after heat treat, part made from drill rod O1 Certificate of Conformity required ship directly to KG grinding	Firmed	1/30/18	5 pcs	0 pcs	5 pcs	\$60.00/pcs	\$300.00
Line Item Note: Parts made from T-01 Round 0.750 ship directly to KG Grinding										
5	168220	646.3013	Blade HEAT TREAT AS PER DWG, SEE NOTE #3 ISSUE P/O: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	1/30/18	12 pcs	0 pcs	12 pcs	\$3.324468/pcs	\$39.89
						✓ 12X AT 18/02/04				
6	168222	646.3015	Blade FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As per dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL DETAIL OF C OF C REQUIRED	Firmed	1/30/18	12 pcs	0 pcs	12 pcs	\$3.324468/pcs	\$39.89
						✓ 12X AT 18/02/04				
7	168230	646.3314	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	1/30/18	10 pcs	0 pcs	10 pcs	\$3.324468/pcs	\$33.24
						✓ 10X AT 18/02/04				

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
8	168231	646.3315	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed	1/30/18	10 pcs	0 pcs	10 pcs	\$3.324468/pcs	\$33.24
						✓ 10x			AT 1/10/18	
9	168232	646.3316	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed	1/30/18	10 pcs	0 pcs	10 pcs	\$3.324468/pcs	\$33.24
						✓ 10x				
10	168266	646.9711	Blade PO to Metcor: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed	1/30/18	40 pcs	0 pcs	40 pcs	\$3.32447/pcs	\$132.98
						✓ 40x			AT 1/18/2018	
									Grand Total: \$1,212.50	

Order Notes

Procurement Quality Clauses
 A005 right of entry
 A012 chemical and physical test report
 A016 personnel qualification
 A017 raw material identification (as applicable)

A022 Apical Processing
 A024 process certifications
 A026 certification of material conformance

A041 quality management system
 A042 dart notification by supplier
 A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

CL

Plex 1/26/18 8:31 AM dart.lavoie.chantal

METCOR INC.

260 BOUT. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 6A5

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450-491-6454

Certificat de Conformité

Certificate of Compliance

BON DE TRAVAIL / CHARGEMENT
order / cad

374784

1

CLIENT / customer: DAE

DART AEROSPACE

(270 ABERDEEN)

HAWKESBURY

CN XBA 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

(270 ABERDEEN)

HAWKESBURY

CN XBA 1K7

COMMANDE DU CLIENT

client ref no

38843

CLASSIFICATION PIECE

part classification

N/A

MATÉRIEL

material

A2

MAÎTRE D'OEUVRE

prime contractor

PROGRAM

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement

SPÉCIFICATIONS / specified

TESTS EXÉCUTÉS / performed

RÉSULTATS DE TESTS / results

results

HARDNESS

88 - 92 HRC

5

88 - 90 HRC

QUANTITÉ
quantity

POIDS
weight

DESCRIPTION DES PIÈCES
parts description

24

30

848.3013

(12) 848.3013 JOB. 188220

(12) 848.3015 JOB. 188222

(10) 848.3314 JOB. 188230

(10) 848.3315 JOB. 188231

(10) 848.3316 JOB. 188232

(40) 848.3711 JOB. 188266

* VALISE

5/2/18

COMMENTAIRES / comments

APPROUVÉ par / Approved by:



METCOR
7

DATE: 2018-01-31

APPROUVÉ
AC

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
324794	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
38843	N/A	A2		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed		RÉSULTATS DE TESTS / results	
HARDNESS	58 - 62 HRC		5	59 - 60 HRC
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
94	30	646.3013 (12) 646.3013 JOB. 168220 (12) 646.3015 JOB. 168222 (10) 646.3314 JOB. 168230 (10) 646.3315 JOB. 168231 (10) 646.3316 JOB. 168232 (40) 646.9711 JOB. 168266 1 VALISE		

COMMENTAIRES / comments

VAC HARDEN 1800F, 1:30 HR
DOUBLE TEMPER 400F, 2 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

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Télécopieur / Fax production: 450 491-6454

DATE: 2018-02-01